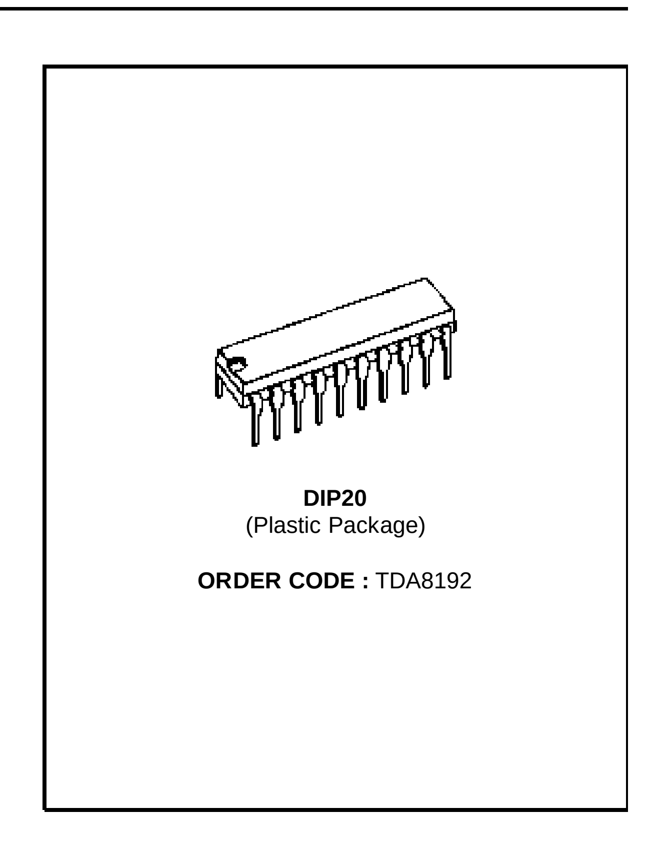


TDA8192

MULTISTANDARD AM AND FM SOUND IF CIRCUIT FOR TV

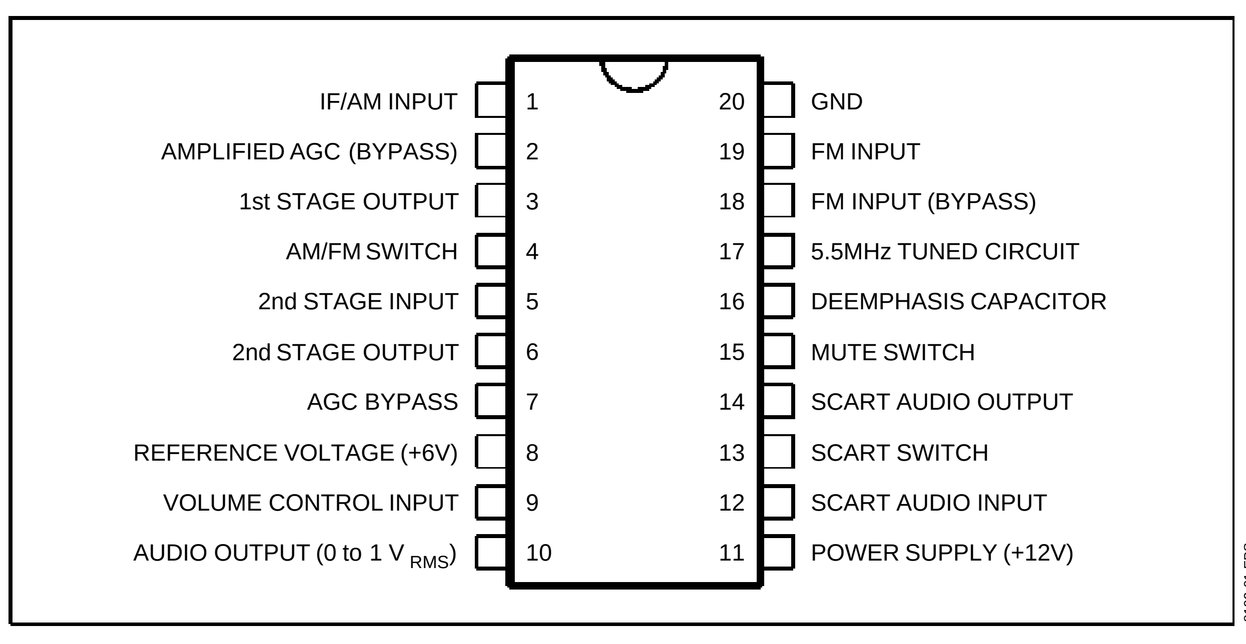
- A 2-STAGE GAIN CONTROLLED AMPLIFIER, PROVIDING COMPLETE IF GAIN ; (AM SECTION)
- A PEAK DETECTOR AND INTEGRATION WHICH PROVIDES AGC-VOLTAGE ; (AM SECTION)
- A 6-STAGE LIMITING AMPLIFIER FOLLOWED BY A SYNCHRONOUS DEMODULATOR AND DEEMPHASIS NETWORK ; (FM SECTION)
- AN AUDIO PREAMPLIFIER
- A CIRCUIT PROVIDING AM/FM SWITCHING AND MUTE FACILITIES
- AN EXTERNAL AUDIO INPUT CIRCUIT WITH SWITCHING FACILITIES TO DELIVER EITHER THE DEMODULATED IF, OR THE EXTERNAL AUDIO SIGNAL AT THE OUTPUT FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN50 049
- A DC CONTROLLED VOLUME CIRCUIT



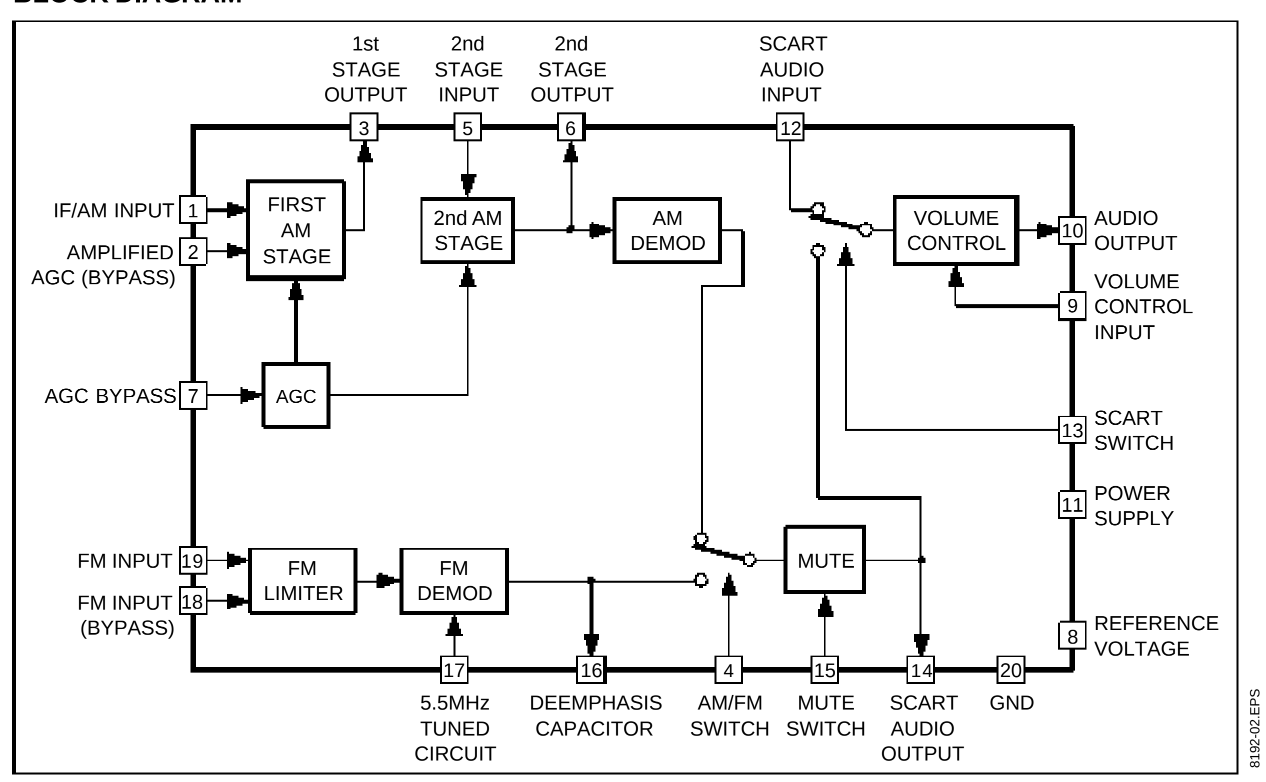
DESCRIPTION

The demodulated IF signal is always available at a low impedance output.

PIN CONNECTIONS



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	16	V
P_{tot}	Total Power Dissipation at $T_{amb} \leq 70°C$	800	mW
T_{op}	Operating Temperature	0 to 70	°C
T_{stg}, T_j	Storage and Junction Temperature	– 55 to 150	°C

8192-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max.	100	°C/W

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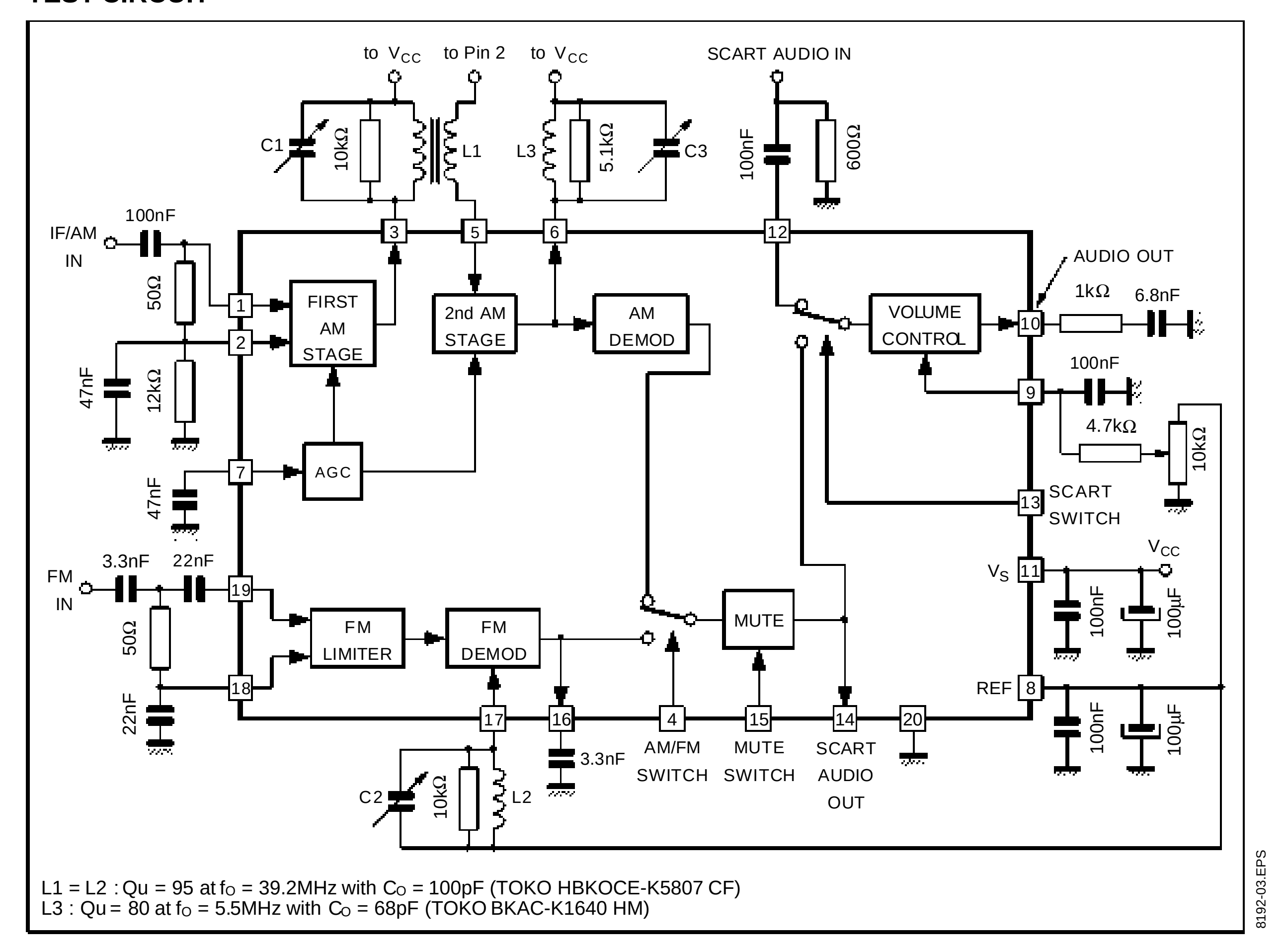
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C, V_S = 12V unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_s	Supply Voltage		10.8	12	13.2	V
I_d	Supply Current	V_i = 0 AM FM		30 30		mA mA
AM SECTION (f_i = 39.2MHz, V_i = 1mV, m = 0.8, f_m = 1kHz unless otherwise specified)						
V_i	Input Sensitivity	S/N = 26dB		35		µV
$\frac{S+N}{N}$	Signal to Noise Ratio	V_i = 0.1mV m = 0.3 V_i = 1mV V_i = 10mV	 50	36 50 56		dB
V_i	AGC Range	ΔV_{OUT} = – 1 to + 1dB		66		dB
V_o	Recovered Audio Signal		0.6	1	1.5	V_{RMS}
d	Distortion (1)				3	%
d	Distortion (2)				3	%
R_i	Input Resistance between Pins 1 and 2	m = 0	2			kΩ
C_i	Input Capacitance between Pins 1 and 2	m = 0		18		pF
FM SECTION (f_i = 5.5MHz, V_i = 1mV, Δf = ± 50KHz, f_m = 1kHz, unless otherwise specified) (continued)						
V_i	Input Limiting Voltage	– 3dB Limiting Point		30		µV
AMR	Amplitude Modulation	V_i = 30mV, m = 0.3		55		dB
$\frac{S+N}{N}$	Signal to Noise Ratio	V_i = 1mV	60			dB
d	Distortion (3)				1.5	%
d	Distortion (4)			2		%
V_o	Recovered Audio Signal		0.5	1	1.5	V_{RMS}
R_i	Input Resistance	Δf = 0	2			kΩ
C_i	Input Capacitance	Δf = 0		14		pF
C_T	Crosstalk AM/FM			70		dB
AM/FM AND MUTE SWITCHING						
	FM ”on” (pin. 4)		2.5		V_S	V
	AM ”on” (pin 4)		0		0.8	V
	Mute ”on” (pin 15)		0		1	V
	Mute ”off” (pin 15)		5		V_S	V
	Signal Attenuation for Mute ”off”		70			dB
	Mute Switch Current				110	µA
	AM/FM Switch Current		50		250	µA
SCART SWITCHING						
	Mode Selection Voltage : TV Selected (pin. 13)		0		5	V
	Mode Selection Voltage : Scart Selected (pin 13)		8		12	V
	Scart Switch Input Resistance		10			kΩ
	Scart Audio Input Amplitude (pin 12)			0.5	2	V_{rms}
	Crosstalk Between Switched Inputs (TV scart)			80		dB
DC VOLUME CONTROL						
	Audio Output Impedance (pin 10)				1	kΩ
	Control Range			90		dB
	Output/input Gain for Maximum Gain Control			0		dB
	Gain Control Voltage		0.5		4.5	V
	Noise Level (DIN 45405)			25		μV_{rms}

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(1) 50% volume setting, V_i = 1mV
(2) 50% volume setting, V_i = 10mV
(3) V_i = 1mV, fm = 100 to 10.000Hz
(4) Vi = 1mV, ± 20KHz offset (detuning of phase shift filter).

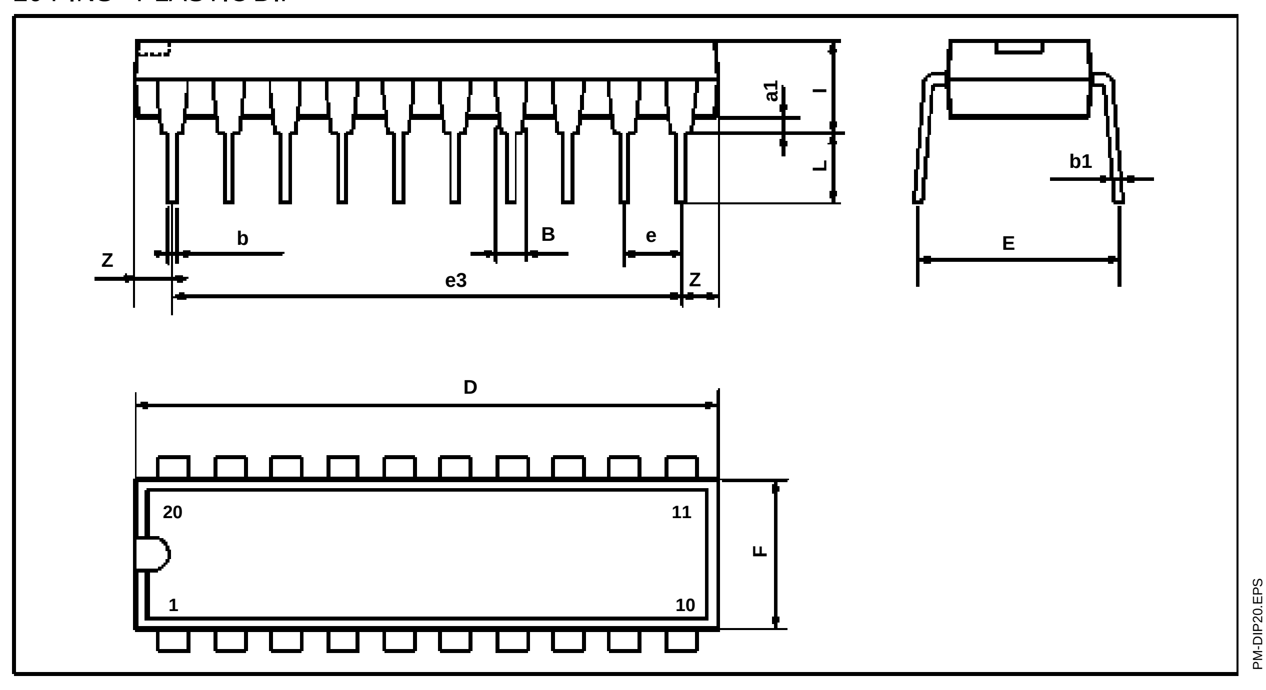
TEST CIRCUIT



L1 = L2 : Qu = 95 at f_O = 39.2MHz with C_O = 100pF (TOKO HBKOCE-K5807 CF)
L3 : Qu = 80 at f_O = 5.5MHz with C_O = 68pF (TOKO BKAC-K1640 HM)

PACKAGE MECHANICAL DATA

20 PINS - PLASTIC DIP



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.45			0.018	
b1		0.25			0.010	
D			25.4			1.000
E		8.5			0.335	
e		2.54			0.100	
e3		22.86			0.900	
F			7.1			0.280
i			3.93			0.155
L		3.3			0.130	
Z			1.34			0.053

DIP20.TBL

